Daniel McCabe

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EDUCATION

UNIVERSITY OF WASHINGTON | Ph.D., Civil Engineering (Transportation)
Expected 2024 | Seattle, WA
Advised by Dr. Xuegang (Jeff) Ban

UNIVERSITY OF WASHINGTON | M.S., Civil Engineering (Transportation)
June 2021 | Seattle, WA
Advised by Dr. Xuegang (Jeff) Ban • GPA: 3.91/4.0

HARVEY MUDD COLLEGE | B.S., Engineering
May 2017 | Claremont, CA
Dean's List, *all eligible semesters* • Graduated with distinction • GPA: 3.51 / 4.0

HONORS

NATIONAL SCIENCE FOUNDATION | Graduate Research Fellowship
2019–2024
Selected for prestigious fellowship based on research proposal for grid integration of battery-electric buses

C2SMART CENTER | Outstanding Student of the Year
2020
Recognized by USDOT Tier 1 Research Center based on research, academic performance, and leadership

EXPERIENCE

UNIVERSITY OF WASHINGTON | Research Assistant
September 2019–present | Seattle, WA
Support research projects in Intelligent Urban Transportation Systems (iUTS) Lab and document with publications. Primary focus is on optimization modeling applied to battery-electric bus systems, including decision making for charger location and recharging scheduling.

UNIVERSITY OF WASHINGTON | Instructor
Autumn 2022 | Seattle, WA
Instructor for CET 513: Transportation Networks & Optimization, a graduate-level course in the Transportation Engineering program with 14 students. Topics included linear and nonlinear programming, network flow models, and applications in transportation, statistics, and machine learning.

CHALMERS UNIVERSITY OF TECHNOLOGY | Visiting Ph.D. Student
March–September 2023 | Gothenburg, Sweden
Visiting student in the Department of Electrical Engineering hosted by Dr. Balázs Kulcsár.

PACIFIC NORTHWEST NATIONAL LABORATORY | Post-Bachelor's Research Associate
July 2017–July 2019 | Richland, WA & Seattle, WA
Performed research in national security and energy domains, focused on infrastructure modeling and optimization. Primarily worked on the *Airport Risk Assessment Model*, a risk quantification and optimization model for allocating security resources at airports; and the *Grid Project Impact Quantification Tool* (gridpiq.pnnl.gov), an online app for evaluating power systems projects.

COURSEWORK & SKILLS

Transportation: Static/dynamic traffic assignment, travel demand modeling, traffic flow theory, intersection operations and control, transit planning and operations, electric vehicles
Operations Research: Linear and nonlinear programming, integer programming, network flow problems, data-driven optimization, simulation
Statistics: Regression, discrete choice models, Markov chains
Programming: Python, R, MATLAB, SQL, LaTeX

PUBLICATIONS & PRESENTATIONS

McCabe, D.P. and X.J. Ban. Optimal Locations and Sizes of Layover Charging Stations for Electric Buses. *Transportation Research Part C: Emerging Technologies* 152 (2023): 104157.

McCabe, D.P. and X.J. Ban. Optimal Location and Sizing of Layover Charging Stations for Electric Buses. Presented at the INFORMS Annual Meeting, 2022.

McCabe, D.P. . Selecting Layover Charging Locations for Battery-Electric Buses: Mixed-Integer Linear Programming Models. Master's thesis, University of Washington, 2021. Available at: http://hdl.handle.net/1773/47413

McCabe, D.P. and X.J. Ban. Optimization Model for Battery-Electric Bus Charging Infrastructure Location. Presented at the Transportation Research Board Annual Meeting, 2021.

Fan, R., **McCabe, D.P.** , and X.J. Ban. A General Equilibrium Model for Integrated CAV Ridesourcing and Transit Services for the Morning Commute. Presented at the Transportation Research Board Annual Meeting, 2021.

ACADEMIC SERVICE

REVIEWER | 2019–present

- *Transportation Research Part C*
- Transportation Research Board Annual Meeting (2021–2023)
- 8th International Symposium on Dynamic Traffic Assignment (2021)

ACTIVITIES & LEADERSHIP

HUSKY CYCLING CLUB | President (2021–present)

Leader of student cycling club at the University of Washington. Organize group bicycle rides, coordinate training and travel to races, interface with sponsors.

PEDALING RELIEF PROJECT | Volunteer (2022–present)

Volunteer to deliver groceries by bicycle from food banks to local people and community food pantries. Help develop software for coordinating volunteers and delivery routes.

SEATTLE PUBLIC LIBRARY | Volunteer Homework Helper (2018–2019)

Provided free after-school tutoring to K–12 students

CLAREMONT-MUDD-SCRIPPS CROSS COUNTRY & TRACK | Athlete (2013–2017)

Distance runner for NCAA Division III nationally ranked cross country and track teams